

State: ARUNACHAL PRADESH
Agricultural contingency Plan: Upper Siang District

1. District Agricultural profile				
1.1	Agro-Climatic /Ecological Zone	16.3 Arunachal Pradesh (Subdued Eastern Himalayas), warm to hot, perhumid eco-subregion (C1A10)		
	Agro Ecological Sub Region (ICAR)	Purvanchal (Eastern Himalayan range) warm per humid		
	Agro-Climatic Region (Planning Commission)	Eastern Himalayan Region II		
	Agro-Climatic Zone (NARP)*	AZ49 Temperate to sub alpine (North Eastern hills) (Hill Zone of Assam), Diphu		
	List all the districts falling under the NARP Zone	Karbi Anglong, NC Hills, Lohit, Upper Siang, West Siang, East siang, upper Subansiri, west kameng, East Garo hills, Kohima, West Khasi Hills, Mon, Phek MokokChong, Tuensung, Workha, Zonabuto		
	Geographic coordinates of district	Latitude	Longitude	Altitude
		94° - 95° North	28° - 29° East	200 m – 1800m
	Name and address of the concerned ZRS/ZARS/RARS/RRS/RRTTS	Regional Agricultural Research Station, Assam Agricultural University, Diphu		
Mention the KVK located in the district	Geku			

1.2	Rainfall	Average (mm)	Normal Onset (specify week and month)	Normal Cessation (specify week and month)
	SW monsoon (June-Sep)	1252.0	1 st week of June	Last week of September
	NE monsoon (Oct – Dec)	200.0	1 st week of October	Last week of December
	Winter (Jan – March)	83.0	Sporadic rain & erratic in behaviour	-
	Summer (Apr – May)	157.8	1 st week of April	-
	Annual	1693		

- If a district falls in two NARP zones, mention the zone in which more than 50% area falls

1.3	Land use pattern of the district (latest statistics)	Geographical area '000 ha	Forest area '000 ha	Land under non-agricultural use '000 ha	Permanent pastures '000 ha	Cultivable wasteland '000 ha	Land under misc tree crops and groves '000 ha	Barren and uncultivable land '000 ha	Current fallows '000 ha	Other fallows '000 ha
	Area (ha)	705	562.7	0.93	0.55	6.59	0.64	0.66	1.50	1.75

*Source: Directorate of Economics and Statistics, Ministry of Agriculture, Govt.of.India.(Data provided for the year 2011)

1.4	Major Soils		Area (ha)	Percent of total
	1. Sandy loam to clay loam soils		NA	
	2. Radish sandy loam soils		NA	
1.5	Agricultural land use		Area ('000 ha)	Cropping intensity (%)
	Net sown area		9.97	108%
	Area sown more than once		0.81	
	Net irrigated area		2.24	
	Gross cropped area		10.78	

*Source: Directorate of Economics and Statistics, Ministry of Agriculture, Govt.of.India. (Data provided for the year 2011)

1.6	Irrigation	Area ('000 ha)		
	Net cultivated area	-		
	Net irrigated area	18.25		
	Gross cultivated area	1.79		
	Gross irrigated area	20.81		
	Rainfed area	1.79		
	Source of irrigation	Number	Area ('000 ha)	% area
	Tanks	NA	--	-
	Bore wells	-	-	-

	Lift irrigation	-	-	-
	Other sources (River & stream)	-	-	-
	Total	-	-	-
	Pumpsets	-	--	-
	Micro-irrigation	-	-	-
	Ground water availability and use	No. of blocks	% of area	Quality of water
	Over exploited	-	-	-
	Critical	-	-	-
	Semi-critical	-	-	-
	Safe	-	-	-
	Waste water availability and use	-	-	-

* Over-exploited: ground water utilization > 100% ; Critical: 90 – 100%; Semi-critical: 70-90%; Safe: < 70%

*Source: Directorate of Economics and Statistics, Ministry of Agriculture, Govt. of. India.(Data provided for the year 2008-09)

1.6. a.	Fertilizer and Pesticides use	Type	Total quantity (000'tonnes) in 2005-06
1	Fertilizers*	Urea DAP Potash (MOP) SSP Other straight fertilizers (specify) Other complex fertilizers (specify) Biofertilizers	5 kg/ha 2 kg/ha 5kg/ha
2	Chemical Pesticides*	Insecticides Fungicides Weedicides Others (specify)	100 ml/ha 90 g/ha 50/ha

Source : District Agriculture

Area under major field crops & horticulture etc.:

1.7		Field crops	Total area (Ha)	Irrigated (Ha)	Rainfed (Ha)
	1	Paddy	3300		2890
	2	Paddy(Jhum)	3100		3330
	3	Maize	1320	-	6414
	4	Millet	1110	-	3793
	5	Pulses	280	-	539

	6	Oilseeds	85	-	10
	7				
		Horticultural crops – Fruits			
	1	Apple	205	-	205
	2	Banana	195	-	195
	3	Pineapple	157	-	157
	4	Jackfruit	30	-	30
	5	Pears	5	-	5
	6	Papaya	35	-	35
	7	Lemon	5	-	5
		Horticultural crops- Vegetables & Spices			
	1	Potato	85	-	2933
		Vegetables	280	-	280
		Chilly	230	-	230
		Ginger	255	-	255
		Sugarcane	110	-	110
		Turmeric	112	-	112
	2	Rabi vegetables	1620	1500	120
	3	Kharif vegetables	3310	2300	1010
	4	Turmeric	472	-	472
	5	Ginger	25	-	25
	6	Chilli	2515	-	2515
	7	Black peeper	65	-	65
		Plantation crops			
	1	Oranges	878		878
	2	Citrus(Valencia)	5		5
		Large cardamom green	360		360

- If break-up data (irrigated, rainfed) is not available, give total area\

1.8	Live stock	Number ('000)
	Cattle	15
	Buffaloes	
	Commercial dairy farms	
	Goat	7
	Sheep	

	Others (Pig)	24		
1.9	Poultry			
	Commercial	26		
	Backyard	52.573		
1.10	Inland Fisheries	Area (ha)	Yield (t/ha)	Production (tones)
	Fresh water			
	Others			

1.11	Name of crop	Kharif		Rabi		Summer		Total		Crop residue as fodder ('000 tons)
		Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	Production ('000 t)	Productivity (kg/ha)	
Major Field crops (Crops to be identified based on total acreage)										
Crop 1	Rice	1.127	1910			1.127	1910	1.127	1910	
Crop 2	Rape & Mustard									
Crop 3	Maize	0.0002	1530					0.0002	1530	
Crop 4	Sugarcane									
Crop 5										
Others										
Major Horticultural crops (Crops to be identified based on total acreage)										
Crop 1	Ginger	0.3	12000Kg/ha					0.3	12000Kg/ha	
Crop 2	Pineapple									
Crop 3	Banana									
Crop 4	Orange	0.878	13300Kg/ha					0.898	13300Kg/ha	
Crop 5	Limes & lemons									
Others										

1.12	Sowing window for 5 major field crops (start and end of normal sowing period)	Crop 1: Rice	2: Rape & Mustard	3: Maize	4: Sugarcane	5: Ginger
	Kharif – Rainfed	June- July	-	April - May	March - April	April – May
	Kharif – Irrigated		-	April - May	March - April	
	Rabi – Rainfed		15 th October – 15 th November	-	-	-

	Rabi – Irrigated				-	-
	Summer – Rainfed		-	-	-	-
	Summer – Irrigated		-	-	-	-

1.13	What is the major contingency the district is prone to? (Tick mark and mention years if known during the last 10 year period)	Regular			Sporadic			None
		Severe	Moderate	Mild	Severe	Moderate	Mild	
	Drought					√		
	Flood							√
	Cyclone							√
	Hail storm						√	
	Heat wave							√
	Cold wave							√
	Frost					√		√
	Sea water intrusion							√
	Pests and diseases (specify)					√		
	Others							

1.14	Include Digital Map of the district	Locations map of district within State as Annexure 1	Enclosed : Yes
		Mean annual rainfall as Annexure 2	Enclosed : No
		Soil map as Annexure 3	Enclosed : No

Annexure 1
Location map of Upper Siang



2.0 Strategies for weather related contingencies

2. Drought

2.1 Drought (Rainfed situation)

Drought-Pre-Monsoon (Last week of March to First week of April) Normal

Condition	Major Farming situation	Normal Crop / Cropping system	Change in crop /cropping system including variety	Suggested Contingency measures	
Early season drought (delayed onset)				Agronomic measures	Remarks on Implementation
Delay by 2 weeks (2 nd to 3 rd week of April)	Moderately steep sloping hills with very deep fine soils	Jhum paddy	No change <ul style="list-style-type: none"> Short duration vars. Ranjit, CAU-R-1, TTB-404 	<ul style="list-style-type: none"> Higher seed rate application Foliar spray of 2% urea Weeding is to be done at regular interval. 	Schemes from line departments RKVY/ATMA
		Maize	No change <ul style="list-style-type: none"> Short duration crops/varieties like RCM-1-75, RCM-1-76 Maize + soya bean/rice bean inter cropping 	<ul style="list-style-type: none"> Conservation of pre-monsoon soil moisture through soil/straw/grass mulching practices Hydropriming/ seed soaking in water for 24hr and followed by shade drying before sowing. Application of organic manure before sowing. 	Schemes from line departments RKVY/ATMA
		Millet	No change <ul style="list-style-type: none"> Short duration crops/varieties of finger millet (VR-708, GPU-67), foxtail millet (SR-16, Meera) 		Schemes from line departments RKVY/ATMA
		Vegetables crops	No change <ul style="list-style-type: none"> Kashi Anmol, Arka Lohit, Kashi Early, IIHR -Sel. 132 	<p><u>Cole Crops</u></p> <ul style="list-style-type: none"> Use short duration varieties. Use of organic manures (FYM 5 tones/ha or vermicompost 1 ton/ha) Raise crop on ridge-furrow or raised bed planting system Conservation of soil moisture through 	Schemes from line departments RKVY/ATMA

				soil/straw/grass mulching practices. Chilli	
Very steep to steep sloping hills with shallow loamy soils	Jhum paddy	No change ▪ Short duration vars. Ranjit, CAU-R-1, TTB-404	<ul style="list-style-type: none"> ▪ Raise crop on ridge-furrow raised bed planting system ▪ Use of organic manures (FYM 5 tones/ha or vermicompost 1 ton/ha) to enhance water holding capacity of soil ▪ Conservation of soil moisture through soil/straw/grass mulching practices. ▪ Do not allow weeds to grow during plant's early growth stage. ▪ Mixed cropping of various vegetable crops. 	<ul style="list-style-type: none"> ▪ Foliar spray of 2% urea ▪ Higher seed rate application ▪ Weeding is to be done at regular interval. 	
	Maize	No change ▪ Short duration crops/varieties like RCM-1-75, RCM-1-76 ▪ Maize + groundnut/soy a bean/rice bean inter cropping.	<ul style="list-style-type: none"> ▪ Conservation of pre-monsoon soil moisture through soil/straw/grass mulching practices ▪ Hydropriming/ seed soaking in water for 24hr and followed by shade drying before sowing. ▪ Application of organic manure before sowing. 		
	Millet	Short duration crops/varieties of finger millet (VR-708, GPU-67), foxtail millet (SR-16, Meera)			

2.1.2 **Drought-irrigated situation** : NA in this district

Drought Normal onset of monsoon (1st week of june) Normal

Condition		Suggested Contingency measures			
Early season drought (Normal onset)	Major Farming situation	Normal Crop/cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Delay by 2 weeks (3 rd week of June)	Moderately steep sloping hills with very deep fine soils	Jhum paddy	No change <ul style="list-style-type: none"> Short duration vars. Ranjit, CAU-R-1, TTB-404 	<ul style="list-style-type: none"> Higher seed rate application Foliar spray of 2% urea Weeding is to be done at regular interval. 	Schemes from line departments RKVY/ATMA
		Maize	No change <ul style="list-style-type: none"> Short duration crops/varieties like RCM-1-75, RCM-1-76 Maize + groundnut/soya bean/rice bean inter cropping 	<ul style="list-style-type: none"> Conservation of pre-monsoon soil moisture through soil/straw/grass mulching practices Hydropriming/ seed soaking in water for 24hr and followed by shade drying before sowing. Application of organic manure before sowing. 	Schemes from line departments RKVY/ATMA
		Millet	No change <ul style="list-style-type: none"> Short duration crops/varieties of finger millet (VR-708, GPU-67), foxtail millet (SR-16, Meera) 	<ul style="list-style-type: none"> 10% higher seed rate 	
		Vegetables crops	No change <ul style="list-style-type: none"> Use short duration varieties. Kashi Anmol, Arka Lohit, Kashi Early, IIHR -Sel. 132 	<p><u>Cole Crops</u></p> <ul style="list-style-type: none"> Use of organic manures (FYM 5 tones/ha or vermicompost 1 ton/ha) Raise crop on ridge-furrow or raised bed planting system Conservation of soil moisture through soil/straw/grass mulching practices. <p><u>Chilli</u></p> <ul style="list-style-type: none"> Raise crop on ridge-furrow raised bed planting system Use of organic manures (FYM 5 tones/ha or vermicompost 1 ton/ha) to enhance water holding capacity of soil 	

				<ul style="list-style-type: none"> Conservation of soil moisture through soil/straw/grass mulching practices. Do not allow weeds to grow during plant's early growth stage. Mixed cropping of various vegetable crops. 	
Very steep to steep sloping hills with shallow loamy soils	Jhum paddy	No change <ul style="list-style-type: none"> Short duration vars. Ranjit, CAU-R-1, TTB-404 	<ul style="list-style-type: none"> Foliar spray of 2% urea Higher seed rate application Weeding is to be done at regular interval. 		
	Maize	No change <ul style="list-style-type: none"> Short duration crops/varieties like RCM-1-75, RCM-1-76 Maize + groundnut/soya bean/rice bean inter cropping. 	<ul style="list-style-type: none"> Conservation of pre-monsoon soil moisture through soil/straw/grass mulching practices Hydropriming/ seed soaking in water for 24hr and followed by shade drying before sowing. Application of organic manure before sowing. 		
	Millet	Short duration crops/varieties of finger millet (VR-708, GPU-67), foxtail millet (SR-16, Meera)			

Normal onset of pre- monsoon

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)					
Normal onset followed by 15-20 days dry spell after sowing leading to poor germination/crop stand etc.	Moderately steep sloping hills with very deep fine soils	Jhum paddy	<ul style="list-style-type: none"> Weeding to be doen at regular interval Application of organic manure whenever possible Gap filling to be done to maintain optimum plant density Foliar application of 1% MOP 	<ul style="list-style-type: none"> Provide irrigation from the available sources Mulching with locally available material 	Schemes from Line Deptt. /RKVY/ATMA
		Maize	<ul style="list-style-type: none"> If the germination is less than 30% of optimum plant population, re sowing 	<ul style="list-style-type: none"> Provide irrigation from the available sources 	Schemes from

			<ul style="list-style-type: none"> should be done ▪ Gap filling to be done to maintain optimum plant density ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Mulching with locally available material 	Line Deptt. /RKVY/ATMA
		Millet (finger/foxtail millet)	<ul style="list-style-type: none"> ▪ If the germination is less than 30% of optimum plant population re sowing should be done ▪ Gap filling to be done to maintain optimum plant density ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	
		Vegetable crops (Cole, Chilli, beans, okra, brinjal)	<ul style="list-style-type: none"> ▪ Gap filling with available seedlings. ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Prefer Drip/sprinkler irrigation ▪ Mulching with locally available material 	Protected cultivation to be promoted
	Very steep to steep sloping hills with shallow loamy soils	Jhum Paddy	<ul style="list-style-type: none"> ▪ Weeding to be doen at regular interval ▪ Application of organic manure whenever possible ▪ Gap filling to be done to maintain optimum plant density ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	Schemes from Line Deptt. /RKVY/ATMA
		Maize	<ul style="list-style-type: none"> ▪ If the germination is less than 30% of optimum plant population, re sowing should be done ▪ Gap filling to be done to maintain optimum plant density ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	Schemes from Line Deptt. /RKVY/ATMA
		Millet	<ul style="list-style-type: none"> ▪ If the germination is less than 30% of optimum plant population re sowing should be done ▪ Gap filling to be done to maintain optimum plant density ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	
		Vegetable	<ul style="list-style-type: none"> ▪ Gap filling with available seedlings. ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Prefer Drip/sprinkler irrigation ▪ Mulching with locally available material 	Protected cultivation to be promoted Promoted rain water harvesting structure

Condition			Suggested Contingency measures		
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm)period)	Major Farming situation	Normal Crop /cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Vegetative stage	Moderately steep sloping hills with very deep fine soils	Jhum paddy	<ul style="list-style-type: none"> ▪ Weeding ▪ Application of organic manure ▪ Gap filling ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	
		Maize	<ul style="list-style-type: none"> ▪ Weeding ▪ Interculture ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	
		Millet (finger/foxtail millet)	<ul style="list-style-type: none"> ▪ Weeding ▪ Interculture ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	
		Vegetable crops (Cole, Chilli, beans, okra, brinjal)		<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Prefer Drip/sprinkler irrigation 	

	Very steep to steep sloping hills with shallow loamy soils	Jhum paddy	<ul style="list-style-type: none"> ▪ Weeding ▪ Application of organic manure ▪ Gap filling ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	
		Maize	<ul style="list-style-type: none"> ▪ Weeding ▪ Interculture ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	
		Millet (finger/foxtail millet)	<ul style="list-style-type: none"> ▪ Weeding ▪ Interculture ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	
		Vegetable crops (Cole, Chilli, beans, okra, brinjal)		<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Prefer Drip/sprinkler irrigation 	

Condition			Suggested Contingency measures		
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm)period)	Major Farming situation	Normal Crop /cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Reproductive stage	Moderately steep sloping hills with very deep fine soils	Jhum paddy	<ul style="list-style-type: none"> ▪ Weeding ▪ Application of organic manure ▪ Gap filling ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	Schemes from Line Deptt. /RKVY/ATMA
		Maize	<ul style="list-style-type: none"> ▪ Weeding ▪ Interculture ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	

		Millet (finger/foxtail millet)	<ul style="list-style-type: none"> ▪ Weeding ▪ Interculture ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	
		Vegetable crops (Cole, Chilli, beans, okra, brinjal)		<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Prefer Drip/sprinkler irrigation 	
	Very steep to steep sloping hills with shallow loamy soils	Jhum paddy	<ul style="list-style-type: none"> ▪ Weeding ▪ Application of organic manure ▪ Gap filling ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	Schemes from Line Deptt. /RKVY/ATMA
		Maize	<ul style="list-style-type: none"> ▪ Weeding ▪ Interculture ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	
		Millet (finger/foxtail millet)	<ul style="list-style-type: none"> ▪ Weeding ▪ Interculture ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Mulching with locally available material 	
		Vegetable crops (Cole, Chilli, beans, okra, brinjal)		<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources ▪ Prefer Drip/sprinkler irrigation 	

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures			
			Crop management	Rabi Crop planning	Remarks on Implementation	
Terminal drought (Early withdrawal of monsoon)	Moderately steep sloping hills with very deep fine soil	Jhum Paddy	<ul style="list-style-type: none"> Harvest at physiological maturity 	<ul style="list-style-type: none"> Planning for zero tillage cultivation of pea, toria etc. Preparation for cole crops 	Schemes from Line Deptt./RKVY/ATMA	
		Millet (finger/foxtail millet)	<ul style="list-style-type: none"> Harvest at physiological maturity 	<ul style="list-style-type: none"> Planning for zero tillage cultivation of pea, toria etc. Preparation for cole crops 		
		Very steep to steep sloping hills with shallow loamy soils	Jhum Paddy	<ul style="list-style-type: none"> Harvest at physiological maturity 	<ul style="list-style-type: none"> Planning for zero tillage cultivation of pea, toria etc. Preparation for cole crops 	Schemes from Line Deptt./RKVY/ATMA
			Millet (finger/foxtail millet)	<ul style="list-style-type: none"> Harvest at physiological maturity 	<ul style="list-style-type: none"> Planning for zero tillage cultivation of pea, toria etc. Preparation for cole crops 	

Normal onset of monsoon

Condition	Major Farming situation	Normal Crop/cropping system	Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Early season drought (Normal onset)	Moderate steep sloping hills with very deep fine soil	Jhum Paddy	<ul style="list-style-type: none"> Gap filling Weeding to be done Foliar application of 1% MOP Application of organic manure, wherever possible Timely plant protection of measures for brown spot, thrips 	<ul style="list-style-type: none"> Provide irrigation from the available sources 	Schemes from Line Deptt./RKVY/ATMA
		Millet (finger/foxtail millet)	<ul style="list-style-type: none"> Gap filling Weeding Foliar application of 1% MOP Application of organic manure, wherever possible 	<ul style="list-style-type: none"> Provide irrigation from the available sources 	
		Off season vegetable crop	<ul style="list-style-type: none"> Mulching with locally available material Foliar application of 1% MOP 	<ul style="list-style-type: none"> Provide irrigation from the available sources 	Protected cultivation to be promoted

	Very steep to steep sloping hills with shallow loamy soils	Jhum Paddy	<ul style="list-style-type: none"> ▪ Weeding to be done ▪ Foliar application of 1% MOP ▪ Application of organic manure, wherever possible ▪ Timely plant protection of measures for brown spot, thrips 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources 	Schemes from Line Deptt. /RKVY/ATMA
		Millet (finger/foxtail millet)	<ul style="list-style-type: none"> ▪ Gap filling ▪ Weeding ▪ Foliar application of 1% MOP ▪ Application of organic manure, wherever possible 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources 	
		Off season vegetable crop	<ul style="list-style-type: none"> ▪ Mulching with locally available material ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources 	Protected cultivation to be promoted Promoted rain water harvesting structure

Condition			Suggested Contingency measures		
			Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm)period)	Major Farming situation	Normal Crop /cropping system			
Vegetative stage	Moderately steep sloping hills with very deep fine soil	Jhum Paddy	<ul style="list-style-type: none"> ▪ Weeding to be done ▪ Foliar application of 1% MOP ▪ Timely plant protection of measures for brown spot, thrips 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources 	Schemes from Line Deptt. /RKVY/ATMA
		Millet (finger/foxtail millet)	<ul style="list-style-type: none"> ▪ Weeding ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources 	
	Very steep to steep sloping hill with shallow loamy soils	Jhum Paddy	<ul style="list-style-type: none"> ▪ Weeding to be done ▪ Foliar application of 1% MOP ▪ Timely plant protection of measures for brown spot, thrips 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources 	
		Millet	<ul style="list-style-type: none"> ▪ Weeding 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available 	

		(finger/foxtail millet)	▪ Foliar application of 1% MOP	sources	
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Condition			Suggested Contingency measures		
Mid season drought (long dry spell, consecutive 2 weeks rainless (>2.5 mm)period)	Major Farming situation	Normal Crop /cropping system	Crop management	Soil nutrient & moisture conservation measures	Remarks on Implementation
Reproductive stage	Moderately steep sloping hills with very deep fine soil	Jhum Paddy	<ul style="list-style-type: none"> ▪ Foliar application of 1% MOP ▪ Timely plant protection of measures for gundhi bug, ▪ 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources 	Schemes from Line Deptt. /RKVY/ATMA
		Millet (finger/foxtail millet)	<ul style="list-style-type: none"> ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources 	
	Very steep to steep sloping hill with shallow loamy soils	Jhum Paddy	<ul style="list-style-type: none"> ▪ Foliar application of 1% MOP ▪ Timely plant protection of measures for gundhi bug 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources 	
		Millet (finger/foxtail millet)	<ul style="list-style-type: none"> ▪ Foliar application of 1% MOP 	<ul style="list-style-type: none"> ▪ Provide irrigation from the available sources 	

Condition			Suggested Contingency measures		
Terminal drought (Early withdrawal of monsoon)	Major Farming situation	Normal Crop/cropping system	Crop management	Rabi Crop planning	Remarks on Implementation
	Moderately steep sloping hills with very deep fine soil	Jhum Paddy	<ul style="list-style-type: none"> ▪ Harvest at physiological maturity 	<ul style="list-style-type: none"> ▪ Planning for zero tillage cultivation of pea, toria etc. ▪ Preparation for cole crops 	Schemes from Line Deptt./RKVY/ATMA
		Millet	<ul style="list-style-type: none"> ▪ Harvest at physiological maturity 	<ul style="list-style-type: none"> ▪ Planning for zero tillage 	

		(finger/foxtail millet)		cultivation of pea, toria etc. ▪ Preparation for cole crops	
Very steep to steep sloping hill with shallow loamy soils	Jhum Paddy		▪ Harvest at physiological maturity	▪ Planning for zero tillage cultivation of pea, toria etc. ▪ Preparation for cole crops	Schemes from Line Deptt./RKVY/ATMA
	Millet (finger/foxtail millet)		▪ Harvest at physiological maturity	▪ Planning for zero tillage cultivation of pea, toria etc. ▪ Preparation for cole crops	

2.1.2 Drought - Irrigated situation: NA

2.2 Unusual rains (untimely, unseasonal etc) (for both rainfed and irrigation situation)

Condition	Suggested contingency measure			
	Vegetative stage	Flowering stage	Crop maturity stage	Post harvest
Continuous high rainfall in a short span leading to water logging				
paddy	Drainage of excess water from the field	Immediate provision of drainage system	<ul style="list-style-type: none"> ▪ Drain out excess water ▪ Harvest at physiological maturity 	<ul style="list-style-type: none"> ▪ Shifting to a safer place ▪ Dry in shade and in well ventilated space
Maize	Provide drainage	Provide drainage	<ul style="list-style-type: none"> ▪ Drain out excess water ▪ Harvest at physiological maturity 	<ul style="list-style-type: none"> ▪ Shifting to a safer place ▪ Dry in shade and in well ventilated space
Millet	Drainage of excess water	Immediate provision of drainage system	<ul style="list-style-type: none"> ▪ Drain out excess water ▪ Harvest at physiological maturity 	Proper drying
Horticulture				
Orange	<ul style="list-style-type: none"> ▪ Provide proper drainage ▪ In steep slopes, prepare half moon terraces to prevent soil erosion and leaching loss ▪ If there is physical damage, pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection. 	<ul style="list-style-type: none"> ▪ .Provide proper drainage ▪ Foliar application of micronutrient/multiplex @ 0.2% should be done to prevent flower drop ▪ Control aphids and mealy bugs etc 	<ul style="list-style-type: none"> ▪ If there is physical damage, pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection ▪ Harvesting can be delayed upto 60-75 days by spraying pre-harvest chemical i.e. 2-4D at 20ppm + GA at 10ppm + 0.2% 	<ul style="list-style-type: none"> ▪ Fruits are to be stored in well aerated farm shed or house to avoid loses. ▪ Storing at 8 – 10 0 C with 85 – 90 % RH is preferred.

	<ul style="list-style-type: none"> Proper nutrient management to be followed. 		<ul style="list-style-type: none"> Kcl on maturing fruits. Harvesting can be delayed. In citrus even after full maturity, the fruits can be left on the tree for 2-3 weeks without deterioration which facilitates prolong harvesting. While picking, the stem end should be cut close to the fruit without damaging the rind. Hence avoiding fungal infection. Collect the good fruits and store them. Damaged fallen fruits to be disposed off 	
Apple	<ul style="list-style-type: none"> Provide proper drainage In steep slopes, prepare half moon terraces to prevent soil erosion and leaching loss If there is physical damage, pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection Nutrient management to be done 	<ul style="list-style-type: none"> Provide proper drainage Half moon terraces to be done to prevent nutrient loss Pruning of damaged branches and application of Bordeaux Paste to be done Nutrient management along with foliar application micronutrient to be done 	<ul style="list-style-type: none"> Spray 2,4,5-T @ 20ppm or 2,4,5-TCPA @ 15ppm to inhibit fruit drop Collect the good fruits and store them. Damaged fallen fruits to be separated and disposed off Necessary to maintain adequate drainage 	<ul style="list-style-type: none"> Stored the fruits for 4-8 months at -1.1 to 0°C and 85-90 % RH. Spray growth regulators Like Alar @ 1000 ppm to improve storability
Pineapple	<ul style="list-style-type: none"> Make trenches/furrows in between ridges to facilitate drainage of excess water Remove the excess suckers to maintain the quality of plant Nutrient management to be followed 	<ul style="list-style-type: none"> Application of Ethephon 2mg in 100-140mg, Bentonite or NAA @ 25ppm or 2, 4-D @ 5-10 ppm should be applied for uniform flower induction. 	<ul style="list-style-type: none"> Provide proper drainage Spraying of insecticides and fungicide Fruits can be protected with locally available material to protect the mature fruit from unusual rains 	<ul style="list-style-type: none"> Store fruits in well aerated farm shed or house to avoid loses. Pineapples can be stored at a temperature of 7.5-12°C and RH 70-90% for 4 weeks.
Kiwifruit	<ul style="list-style-type: none"> Provide proper drainage In steep slopes, prepare half moon terraces to prevent soil erosion and leaching loss If there is physical damage, pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection Nutrient management to be done 	<ul style="list-style-type: none"> Provide proper drainage Half moon terraces to be done to prevent nutrient loss Pruning of damaged branches and application of Bordeaux Paste to be done Nutrient management along with foliar application micronutrient to be done 	<ul style="list-style-type: none"> Heavy pruning should not done as the fruit will be affected by rain Drain out excess water 	<ul style="list-style-type: none"> Stored the fruits at 0 to 4°C and 80-90 % RH. Spray growth regulators Like Alar @ 1000 ppm to improve storability
Banana	<ul style="list-style-type: none"> Provide proper drainage 	<ul style="list-style-type: none"> Provide proper drainage 	<ul style="list-style-type: none"> Provide proper drainage 	<ul style="list-style-type: none"> Store the fruits/ bunch in

	<ul style="list-style-type: none"> ▪ Nutrient management to be done ▪ Propping or staking should be done ▪ Spraying of insecticides and fungicide 	<ul style="list-style-type: none"> ▪ Nutrient management to be done along with application of micronutrient ▪ Propping or staking should be done ▪ Spraying of insecticides and fungicide 	<ul style="list-style-type: none"> ▪ Nutrient management to be done ▪ Propping to be done ▪ Bagging to be done to protect the bunch from unusual rains. ▪ Denavelling to be done to improve the bunch weight (removal of male bud) 	<ul style="list-style-type: none"> well aerated farm shed or house to avoid loses. ▪ Storing at 10 – 12° C with 70 – 80 % RH
Large cardamom	<ul style="list-style-type: none"> ▪ It grows luxuriantly in moist and humid climate. So continuous rain is not a problem during its vegetative growth. ▪ Provide adequate drainage ▪ Spraying of insecticides and fungicide 	<ul style="list-style-type: none"> ▪ Rain during flowering is detrimental. So water logging should be avoided. ▪ Proper drainage system should be followed. ▪ Shade regulation may be taken up providing 50-60% shade. 	<ul style="list-style-type: none"> ▪ Harvesting can be delayed ▪ Proper drainage system should be followed. 	<ul style="list-style-type: none"> ▪ Collect and dry the produce in fuel kiln overnight at 50°-60°C or in drier for 14-18 hours at 45°-50°C
Ginger	<ul style="list-style-type: none"> ▪ Provide proper drainage channels to avoid stagnation of water ▪ Earthing up to be done at proper soil moisture level ▪ Nutrient management to be followed ▪ Field bunding to prevent entry of water from surrounding areas. ▪ Spraying of insecticides and fungicide 	<ul style="list-style-type: none"> ▪ Provision of drainage to remove excess water. ▪ Earthing up should be followed by manuring. ▪ Field bunding to prevent entry of water from surrounding areas. 	<ul style="list-style-type: none"> ▪ Dry weather before harvesting is necessary. So harvesting can be delayed. 	<ul style="list-style-type: none"> ▪ Shifting of the produce to a drier place. ▪ Drying to remove excess moisture of produce.
Turmeric	<ul style="list-style-type: none"> ▪ Provide proper drainage channels to avoid stagnation of water ▪ Earthing up to be done at proper soil moisture level ▪ Nutrient management to be followed ▪ Field bunding to prevent entry of water from surrounding areas. ▪ Spraying of insecticides and fungicide 	<ul style="list-style-type: none"> ▪ Provision of drainage to remove excess water. ▪ Earthing up should be followed by manuring. ▪ Field bunding to prevent entry of water from surrounding areas. 	<ul style="list-style-type: none"> ▪ Dry weather before harvesting is necessary. So harvesting can be delayed. 	<ul style="list-style-type: none"> ▪ Shifting of the produce to a drier place. ▪ Drying to remove excess moisture of produce.
Vegetables (cucurbits)	<ul style="list-style-type: none"> ▪ Provision of drainage to remove excess water. ▪ Earthing up to be done at proper soil moisture condition followed by manuring ▪ Field bunding to prevent entry of water 	<ul style="list-style-type: none"> ▪ Spray maleic hydrazine (MH) and 2, 4-5 tri-iodobenzoic acid (TIBA) @ 50ppm for Sex expression. Boron @ 3ppm and calcium @ 20ppm is also effective. ▪ Provision of drainage to 	<ul style="list-style-type: none"> ▪ Fruits to be harvested immediately without causing injury to fruits ▪ Remove all damaged fruit ▪ Take up appropriate plant protection measures 	<ul style="list-style-type: none"> ▪ The fruits can be stored for 2-3 weeks at 15-20°C and RH 75% in a well-ventilated chamber

	<p>from surrounding areas.</p> <ul style="list-style-type: none"> ▪ Staking should be properly followed. Rainy season crops can be trained on a bower made of bamboos and sticks. 	<p>remove excess water.</p> <ul style="list-style-type: none"> ▪ Earthing up followed by manuring ▪ Field bunding to prevent entry of water from surrounding areas. ▪ Take up proper plant protection measures 		
Heavy rainfall with high speed winds in a short span				
Horticulture				
Orange	<ul style="list-style-type: none"> ▪ Earthing up of young plants to avoid uprooting due to wind. ▪ Provide proper drainage facilities. ▪ Staking to avoid falling off of plants ▪ In steep slopes, prepare half moon terraces to prevent soil erosion and leaching loss ▪ Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection ▪ Proper nutrient management to be followed 	<ul style="list-style-type: none"> ▪ Wind break around the orchard to protect crop from wind damage ▪ Provide proper drainage ▪ Nutrient management to be followed along with foliar spray of micronutrient ▪ Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection 	<ul style="list-style-type: none"> ▪ Propping heavy bearing tree and weak tree by bamboo pole. ▪ Harvesting can be delayed upto 60-75 days by spraying pre-harvest chemical i.e. 2-4D at 20ppm + GA at 10ppm + 0.2% Kcl on maturing fruits. ▪ Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection 	<ul style="list-style-type: none"> ▪ Fruits are to be stored in well aerated farm shed or house to avoid losses. ▪ Pack the fruit in perforated polythene bag, boxes, crates, etc. and store at temperature of 10-11°C & 92 % RH.
Apple	<ul style="list-style-type: none"> ▪ Earthing up of young plants to avoid uprooting due to wind. ▪ Provide proper drainage facilities. ▪ Staking to be done to avoid falling off of plants. ▪ In steep slopes, prepare half moon terraces to prevent soil erosion and leaching loss ▪ Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection ▪ Proper nutrient management to be followed 	<ul style="list-style-type: none"> ▪ Provision of drainage to remove excess water. ▪ Wind break around the orchard ▪ Maintain the half moon terraces to avoid soil nutrient loss ▪ Proper nutrient management to be followed along with foliar application of micronutrient ▪ Prune out all damage branches with appropriate plant protection measures 	<ul style="list-style-type: none"> ▪ Harvest ripe fruits ▪ Propping heavy bearing tree and weak tree by bamboo pole. ▪ Use of plant bio-regulators to delay ripening with Daminozide or Alar @ 1000ppm sprayed before 60 days before harvest. 	<ul style="list-style-type: none"> ▪ Store fruits for 4-8 months at -1.1 to 0°C and 85-90 % RH.
Pineapple	<ul style="list-style-type: none"> ▪ Earthing up plants for better development and anchorage. ▪ Make trenches/furrows in between 	<ul style="list-style-type: none"> ▪ Earthing up to prevent uprooting. ▪ Provide proper drainage 	<ul style="list-style-type: none"> ▪ Fruits can be protected with locally available material to protect the mature fruit from 	<ul style="list-style-type: none"> ▪ .Store fruits in well aerated farm shed or house to avoid losses.

	<ul style="list-style-type: none"> ridges to facilitate drainage of excess water. ▪ Nutrient management to be followed 	<ul style="list-style-type: none"> ▪ Nutrient management to be followed ▪ Spray NAA @ 25ppm or 2, 4-D @ 5-10 ppm should be applied for uniform flower induction. 	<ul style="list-style-type: none"> unusual rains ▪ Spraying of insecticides and fungicide ▪ Earthing up plants for better development and anchorage. ▪ Make trenches/furrows in between ridges to facilitate drainage of excess water 	<ul style="list-style-type: none"> ▪ Pineapples can be stored at a temperature of 7.5-12°C and RH 70-90% for 4 weeks.
Kiwifruit	<ul style="list-style-type: none"> ▪ Provide proper drainage ▪ Support the plant using T-Bar system ▪ In steep slopes, prepare half moon terraces to prevent soil erosion and leaching loss ▪ If there is physical damage, pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection ▪ Nutrient management to be done 	<ul style="list-style-type: none"> ▪ Provide proper drainage ▪ Half moon terraces to be done to prevent nutrient loss ▪ Pruning of damaged branches and application of Bordeaux Paste to be done ▪ Nutrient management along with foliar application micronutrient to be done 	<ul style="list-style-type: none"> ▪ Heavy pruning should not done as the fruit will be affected by rain ▪ Drain out excess water ▪ Maintain the plant using T-Bar trellis supporting system ▪ Nutrient management along with foliar application micronutrient to be done 	<ul style="list-style-type: none"> ▪ Stored the fruits at 0 to 4°C and 80-90 % RH. ▪ Spray growth regulators Like Alar @ 1000 ppm to improve storability
Banana	<ul style="list-style-type: none"> ▪ Provide proper drainage ▪ Nutrient management to be done ▪ Propping or staking should be done ▪ Spraying of insecticides and fungicide ▪ 	<ul style="list-style-type: none"> ▪ Provide proper drainage ▪ Nutrient management to be done along with application of micronutrient ▪ Propping or staking should be done ▪ Spraying of insecticides and fungicide ▪ 	<ul style="list-style-type: none"> ▪ Provide proper drainage ▪ Nutrient management to be done ▪ Propping to be done ▪ Bagging to be done to protect the bunch from unusual rains. ▪ Denavelling to be done to improve the bunch weight (removal of male bud) 	<ul style="list-style-type: none"> ▪ Store the fruits/ bunch in well aerated farm shed or house to avoid loses. ▪ Storing at 10 – 12° C with 70 – 80 % RH
Large cardamom	<ul style="list-style-type: none"> ▪ For newly planted crops, staking should be provided. ▪ Provide adequate drainage ▪ Spraying of insecticides and fungicid ▪ Follow proper nutrient management ▪ Earthing up to be done 	<ul style="list-style-type: none"> ▪ Proper drainage system should be followed. ▪ Follow proper nutrient management ▪ Earthing up to prevent uprooting. 	<ul style="list-style-type: none"> ▪ Harvest at physiological maturity stage or can be delayed ▪ Proper drainage system should be followed 	<ul style="list-style-type: none"> ▪ Collect the harvest and dry the produce in fuel kiln overnight at 50°-60°C or in drier for 14-18 hours at 45°-50°C
Ginger	<ul style="list-style-type: none"> ▪ Provide proper drainage channels to avoid stagnation of water ▪ Earthing up to be done at proper soil moisture level ▪ Nutrient management to be followed ▪ Field bunding to prevent entry of water 	<ul style="list-style-type: none"> ▪ Provision of drainage to remove excess water. ▪ Earthing up should be followed by manuring. ▪ Field bunding to prevent entry of water from surrounding 	<ul style="list-style-type: none"> ▪ Harvest at physiological maturity stage. 	<ul style="list-style-type: none"> ▪ Shifting of the produce to a drier place. ▪ Drying to remove excess moisture of produce (moisture level 10%)

	<p>from surrounding areas.</p> <ul style="list-style-type: none"> ▪ Spraying of insecticides and fungicide 	<p>areas.</p>		
Turmeric	<ul style="list-style-type: none"> ▪ Provide proper drainage channels to avoid stagnation of water ▪ Earthing up to be done at proper soil moisture level ▪ Nutrient management to be followed ▪ Field bunding to prevent entry of water from surrounding areas. ▪ Spraying of insecticides and fungicide 	<ul style="list-style-type: none"> ▪ Provision of drainage to remove excess water. ▪ Earthing up should be followed by manuring. ▪ Field bunding to prevent entry of water from surrounding areas. 	<ul style="list-style-type: none"> ▪ Dry weather before harvesting is necessary. So harvesting can be delayed. 	<ul style="list-style-type: none"> ▪ Shifting of the produce to a drier place. ▪ Drying to remove excess moisture of produce.
Vegetables (cucurbits)	<ul style="list-style-type: none"> ▪ Provision of drainage to remove excess water. ▪ Earthing up to be followed ▪ Ensure proper staking of crop wherever required ▪ Field bunding to prevent entry of water from surrounding areas. 	<ul style="list-style-type: none"> ▪ Spray maleic Hydrazide @ 50ppm aqueous solution at 2 and 4 leaf stages to stimulate vine growth, giving more female flowers. ▪ Provision of drainage to remove excess water. ▪ Wind break around the orchard to protect crop from wind damage ▪ Earthing up and propping to prevent uprooting. ▪ Field bunding to prevent entry of water from surrounding areas. 	<ul style="list-style-type: none"> ▪ Fruits to be harvested immediately without causing injury to fruits ▪ Remove all damaged fruit ▪ Take up appropriate plant protection measures 	<ul style="list-style-type: none"> ▪ The fruits can be stored for 2-3 weeks at 15-20°C and RH 75% in a well-ventilated chamber.
Outbreak of pests and diseases due to unseasonal rains : NA				
Paddy (Blast)	<ul style="list-style-type: none"> ▪ Use trap crops for prediction of disease. ▪ Removal and destruction of weed hosts in the field bunds and channels 	<ul style="list-style-type: none"> ▪ Spraying of Mancozeb @ 2g/lit or spraying of Carbendazim @ 1 g/lit. 	<ul style="list-style-type: none"> ▪ Drain out excess water to avoid flooded conditions. 	<ul style="list-style-type: none"> ▪ Sun drying to prevent spoilage and sprouting of the harvested grains.
Paddy (Brown Spot)	-Do-	-Do-	-Do-	-Do-
Paddy (Bacterial leaf blight)	<ul style="list-style-type: none"> ▪ Destruction of weed hosts. 	<ul style="list-style-type: none"> ▪ Spraying of streptomycin and tetracycline. 	<ul style="list-style-type: none"> ▪ Drain out excess water to avoid flooded conditions. 	-Do-
Paddy (Yellow Stem Borer)	<ul style="list-style-type: none"> ▪ Collection and destruction of egg masses. 	<ul style="list-style-type: none"> ▪ Spraying of Chloropyriphos 20 EC @ 0.02 %. 	<ul style="list-style-type: none"> ▪ Harvesting at the right stage. 	-Do-
Paddy (Gall Midge)	<ul style="list-style-type: none"> ▪ Removal of alternate host plants including weeds and grasses and destruction of infected plants. 	<ul style="list-style-type: none"> ▪ Providing proper drainage system. 	<ul style="list-style-type: none"> ▪ Harvesting at the right stage. 	-Do-

Maize (Stalk rot)	<ul style="list-style-type: none"> Removal of accumulated water around the stalks by proper drainage. 	<ul style="list-style-type: none"> Rouging of affected plant and its destruction. 	<ul style="list-style-type: none"> Spraying of streptocycline @ 0.020 %. 	<ul style="list-style-type: none"> Sun drying of the harvested cob to prevent spoilage.
Horticulture				
Orange (Citrus Leaf miner)	<ul style="list-style-type: none"> Spraying of Fenvalerate and Cypermethrin for controlling leaf minor. 	<ul style="list-style-type: none"> Spraying of Fenvalerate and Cypermethrin for controlling leaf minor. 	<ul style="list-style-type: none"> Harvesting at the right stage and proper handling of the produce. 	<ul style="list-style-type: none"> Store in cool place in crates, boxes etc
Orange (Citrus butterfly)	<ul style="list-style-type: none"> Hand picking of caterpillars and pupae in the nursery. 	<ul style="list-style-type: none"> Spraying of Neem formulation to control citrus butterfly. 	Do	<ul style="list-style-type: none"> Store in cool place in crates, boxes etc
Orange (Powdery mildew in citrus)	<ul style="list-style-type: none"> Spraying of wettable sulphur and carbendazim to control powdery mildews. 	<ul style="list-style-type: none"> Spraying of wettable sulphur, bavistin (0.1 %) and calixin (0.1 %). 	<ul style="list-style-type: none"> Spraying of wettable sulphur and carbendazim to control powdery mildews. 	<ul style="list-style-type: none"> Store in cool place in crates, boxes etc.
Tomato	<ul style="list-style-type: none"> Removal of accumulated water by proper drainage. Destroy the heavily infested/infected plant parts. 	<ul style="list-style-type: none"> Spraying of Sulfex @ 2 g/lit of water. 	<ul style="list-style-type: none"> Harvesting at the right stage and proper handling. 	<ul style="list-style-type: none"> Store in cool/dry place packed in crates, boxes etc.
Brinjal	<ul style="list-style-type: none"> Removal of accumulated water by proper drainage. Destroy the heavily infested/infected plant parts. 	<ul style="list-style-type: none"> Spraying of Sulfex @ 2 g/lit of water. Soil dranching with captan/Tiram @ 2/lit of water 	<ul style="list-style-type: none"> Harvesting at the right stage and proper handling of the produce. 	<ul style="list-style-type: none"> Store in cool/dry place packed in crates, boxes etc.
Cabbage	<ul style="list-style-type: none"> Removal of accumulated water by proper drainage. Destroy the badly infested/infected plant parts. 	<ul style="list-style-type: none"> Spraying of Sulfex @ 2 g/lit of water. Soil dranching with captan/Tiram. @ 2/lit of water Streptocycline spray 	<ul style="list-style-type: none"> Harvesting at the right stage and proper handling of the produce. 	<ul style="list-style-type: none"> Store in cool/dry place
Cucurbits	<ul style="list-style-type: none"> Manual collection & destruction of eggs/grubs/larvae. 	<ul style="list-style-type: none"> Spraying of carbaryl against leaf eating caterpillars, Metalaxyl against Powdery mildew, Carbendazim against leaf spot & blight 	<ul style="list-style-type: none"> Spraying of Malathion against fruit fly. 	<ul style="list-style-type: none"> Store in cool/dry place
Large Cardamom	<ul style="list-style-type: none"> Proper drainage. Uprooting and destruction of Chirke and Foorkey infected cardamom plants. 	<ul style="list-style-type: none"> Removal of affected plant from the field. 	<ul style="list-style-type: none"> Harvesting at the right stage and proper handling of the produce. 	<ul style="list-style-type: none"> Quick drying of harvested capsule.
Ginger (Soft rot)	<ul style="list-style-type: none"> Removal of accumulated water in the field by proper drainage. 	<ul style="list-style-type: none"> Removal and destruction of affected plants. 	<ul style="list-style-type: none"> Spraying with Blitox – 50 (3 g/lit) or Dithane – Z-78 (2.5 g / lit). 	<ul style="list-style-type: none"> Store in cool/dry place

2.3 Floods

Condition	Suggested contingency measure
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Transient water logging/ partial inundation	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Rice	<ul style="list-style-type: none"> ▪ Drainage of the Nursery bed. ▪ Re -sowing if not possible 	<ul style="list-style-type: none"> ▪ Drainage of excess water. ▪ Gap filling In partially damaged field by redistributing the tillers. ▪ Management of pests & diseases 	<ul style="list-style-type: none"> ▪ Drainage of excess water. If flood comes during reproductive stage, emphasis should be given on forthcoming rabi crops. ▪ Utilization of residual soil moisture and use of recharged soil profile for growing pulses 	<ul style="list-style-type: none"> ▪ Drainage of excess water. If flood comes during reproductive stage, emphasis should be given on forthcoming rabi crops. ▪ Utilization of residual soil moisture and use of recharged soil profile for growing pulses
Horticulture/Plantation crops				
Banana	<ul style="list-style-type: none"> ▪ Provide proper drainage ▪ Nutrient management to be done ▪ Propping or staking should be done ▪ Spraying of insecticides and fungicide 	<ul style="list-style-type: none"> ▪ Provide proper drainage ▪ Nutrient management to be done ▪ Propping or staking should be done ▪ Spraying of insecticides and fungicide 	<ul style="list-style-type: none"> ▪ Provide proper drainage ▪ Nutrient management to be done ▪ Propping to be done 	<ul style="list-style-type: none"> ▪ Store the fruits/ bunch in well aerated farm shed or house to avoid loses. ▪ Storing at 10 – 12° C with 70 – 80 % RH
Ginger	<ul style="list-style-type: none"> ▪ Provide proper drainage channels to avoid stagnation of water ▪ Earthing up to be done at proper soil moisture level ▪ Nutrient management to be followed ▪ Field bunding to prevent entry of water from surrounding areas. ▪ Spraying of insecticides and fungicide 	<ul style="list-style-type: none"> ▪ Provision of drainage to remove excess water. ▪ Earthing up should be followed by manuring. ▪ Field bunding to prevent entry of water from surrounding areas. ▪ Application of fungicide and insecticides 	<ul style="list-style-type: none"> ▪ Harvest at physiological maturity stage or can delay harvesting 	<ul style="list-style-type: none"> ▪ Shifting of the produce to drier place.
Turmeric	<ul style="list-style-type: none"> ▪ Provide proper drainage channels to avoid stagnation of water ▪ Earthing up to be done at proper soil moisture level ▪ Nutrient management to be followed ▪ Field bunding to prevent 	<ul style="list-style-type: none"> ▪ Provision of drainage to remove excess water. ▪ Earthing up should be followed by manuring. ▪ Field bunding to prevent entry of water from surrounding areas. ▪ Application of fungicide and insecticides 	<ul style="list-style-type: none"> ▪ Harvest at physiological maturity stage or can delay harvesting 	<ul style="list-style-type: none"> ▪ Shifting of the produce to drier place

	entry of water from surrounding areas. ▪ Spraying of insecticides and fungicide			
Vegetables (cucurbits)	<ul style="list-style-type: none"> ▪ Proper drainage of the nursery bed, If not possible go for re-sowing. ▪ Raised bed method should be followed in the nursery. ▪ Earthing up to be followed ▪ Ensure proper staking of crop wherever required ▪ Field bunding to prevent entry of water from surrounding areas. 	<ul style="list-style-type: none"> ▪ Proper drainage of the nursery bed, If not possible go for re-sowing. ▪ Earthing up to be followed ▪ Ensure proper staking of crop wherever required ▪ Field bunding to prevent entry of water from surrounding areas. ▪ Follow appropriate nutrient management practices 	<ul style="list-style-type: none"> ▪ Drainage of excess water. If flood comes during reproductive stage, emphasis should be given on forthcoming rabi crops ▪ Growing of cole crops or winter vegetables after receding flood water and adoption of integrated farming system to obtain more income and to compensate the loss during kharif vegetables. 	Shifting of the produce to drier place and store fruits in a well-ventilated chamber
Continuous submergence for more than 2 days²				
Crop1	NA	NA	NA	NA
Horticulture / Plantation crops				
Crop1 (specify)	NA	NA	NA	NA
Sea water intrusion³				
Crop1	NA	NA	NA	NA

2.4 Extreme events: Heat wave / Cold wave/Frost/ Hailstorm /Cyclone: Not Applicable

Extreme event type	Suggested contingency measure ^r			
	Seedling / nursery stage	Vegetative stage	Reproductive stage	At harvest
Horticulture				
Heat Wave^p				
Orange	NA	NA	NA	NA
Apple	NA	NA	NA	NA
Pineapple	NA	NA	NA	NA
Kiwifruit	NA	NA	NA	NA
Banana	NA	NA	NA	NA

Large Cardamom	NA	NA	NA	NA
Ginger	NA	NA	NA	NA
Turmeric	NA	NA	NA	NA
Horticulture				
Cold wave^q				
Orange	NA	NA	NA	NA
Apple	NA	NA	NA	NA
Pineapple	NA	NA	NA	NA
Kiwifruit	NA	NA	NA	NA
Banana	<ul style="list-style-type: none"> ▪ Protect the plant by construction of wind brakes made of shade net. ▪ Maintain the seedling in polyhouse 	<ul style="list-style-type: none"> ▪ Protect the plant by construction of wind brakes made of shade net 	<ul style="list-style-type: none"> ▪ Protect the plant by construction of wind brakes made of shade net ▪ Protect the bunch by bagging with polyethylene bag or jute bag 	NA
Large Cardamom	NA	NA	NA	NA
Ginger	NA	NA	NA	NA
Turmeric	NA	NA	NA	NA
Horticulture				
Frost				
Orange	NA	NA	NA	NA
Apple	NA	NA	NA	NA
Pineapple	NA	NA	NA	NA
Kiwifruit	NA	NA	NA	NA
Banana	<ul style="list-style-type: none"> ▪ Protect the plant by construction of wind brakes made of shade net. ▪ Maintain the seedling in polyhouse 	<ul style="list-style-type: none"> ▪ Protect the plant by construction of wind brakes made of shade net 	<ul style="list-style-type: none"> ▪ Protect the plant by construction of wind brakes made of shade net ▪ Protect the bunch by bagging with polyethylene bag or jute bag 	NA
Large Cardamom	NA	NA	NA	NA
Ginger	NA	NA	NA	NA
Turmeric	NA	NA	NA	NA
Horticulture				
Hailstorm				

Orange	<ul style="list-style-type: none"> Nursery raising under polyhouse. 	<ul style="list-style-type: none"> Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection Nutrient management to be followed along with foliar spray of micronutrient 	<ul style="list-style-type: none"> Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection Nutrient management to be followed along with foliar spray of micronutrient 	<ul style="list-style-type: none"> Harvest ripe fruit
Apple	<ul style="list-style-type: none"> Nursery raising under polyhouse. 	<ul style="list-style-type: none"> Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection Nutrient management to be followed along with foliar spray of micronutrient 	<ul style="list-style-type: none"> Pruning of damage branches and application of Bordeaux paste should be done to prevent secondary infection Nutrient management to be followed along with foliar spray of micronutrient 	<ul style="list-style-type: none"> Harvest ripe fruit
Pineapple	NA	<ul style="list-style-type: none"> Shade regulation may be followed 	NA	<ul style="list-style-type: none"> Harvest and value addition
Kiwifruit	<ul style="list-style-type: none"> Nursery raising under polyhouse 	<ul style="list-style-type: none"> Nutrient management to be followed along with foliar spray of micronutrient 	<ul style="list-style-type: none"> Nutrient management to be followed along with foliar spray of micronutrient 	<ul style="list-style-type: none"> Harvest ripe fruits
Banana	<ul style="list-style-type: none"> Nursery raising under polyhouse 	<ul style="list-style-type: none"> Follow nutrient management 	<ul style="list-style-type: none"> Bagging the fruit bunch with polyethylene bag or jute bag 	<ul style="list-style-type: none"> Harvest the mature bunch
Large Cardamom	<ul style="list-style-type: none"> Nursery raising under polyhouse. 	<ul style="list-style-type: none"> Shade regulation may be followed by planting trees providing 50-60% shade. Ultis cum large cardamom plantation is highly recommended 	NA	NA
Ginger	<ul style="list-style-type: none"> Nursery raising under polyhouse. 	<ul style="list-style-type: none"> Shade regulation may be followed 	NA	NA
Turmeric	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 		
Vegetables (cucurbits)	<ul style="list-style-type: none"> Nursery raising under polyhouse. Provide shade to protect from damage or resowing of the crops 	<ul style="list-style-type: none"> Polyhouse cultivation & proper irrigation 	<ul style="list-style-type: none"> Polyhouse cultivation & proper irrigation Proper crop management for the succeeding years 	<ul style="list-style-type: none"> Picking of fruits at right edible stage depends upon individual varieties and marketing requirements. Fruits are harvested, packed in baskets and transported to markets.

Horticulture				
Cyclone	NA	NA	NA	NA
Orange	NA	NA	NA	NA
Apple	NA	NA	NA	NA
Pineapple	NA	NA	NA	NA
Kiwifruit	NA	NA	NA	NA
Banana	NA	NA	NA	NA
Large Cardamom	NA	NA	NA	NA
Ginger	NA	NA	NA	NA
Turmeric	NA	NA	NA	NA
Sand deposition or heavy siltation				
Specify crop /horticulture/plantation	NA	NA	NA	NA

2.5 Contingent strategies for Livestock, Poultry & Fisheries

2.5.1 Livestock

	Suggested contingency measures		
	Before the event ^s	During the event	After the event
Drought			
Feed and fodder availability	<ul style="list-style-type: none"> ▪ Advance early warning system through Agromet advisories. ▪ Awareness on fodder cultivation & identification of locally available, natural fodder of area. ▪ Excess fodder may be stored as hay/silage or converted into feed block in the flush season, for lean period. ▪ Stacking of paddy straws. 	<ul style="list-style-type: none"> ▪ Use of unconventional feed/fodders resources. ▪ Grazing in the peri peri of forest areas. ▪ Feeding according to body weight requirement ▪ Improvement of the poor quality roughages (urea treatment, soaking, poultry litter(> 37%). ▪ Use of feed additives to improve digestibility. ▪ use of stored Hay and Silage 	<ul style="list-style-type: none"> ▪ Avail the benefits of schemes under drought, from state or central for feeds and fodder. ▪ Supplementary feeding of livestock to regain the general physiological imbalanced. ▪ Proper irrigation of fodder plot and cultivation of leguminous fodders to meet the demand of green fodders
Drinking water	<ul style="list-style-type: none"> ▪ Construction of water harvesting structures. ▪ Harvesting rain water & water from natural source ▪ Developing watershed areas. 	<ul style="list-style-type: none"> ▪ Use of stored water from water harvesting structure. ▪ Fetching water from watershed areas and natural stream/river. ▪ Avail subsidy water supply through tankers from sate or central Govt. 	<ul style="list-style-type: none"> ▪ Submitting a memorandum to sate or central Govt. regarding amount of water shortfall during drought and action to be initiate accordingly. ▪ Construction of permanent water harvesting structure with a planning to fulfill the water

			requirement during drought.
Health and disease management	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. ▪ Proper ventilation system of Housing to reduce heat stress. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ selective culling of disease animal ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to Drought and remedies to be taken accordingly for future. ▪ Mini vaccine unit could be establish for covering a perimeter 30-50 km.
Floods			
Feed and fodder availability	<ul style="list-style-type: none"> ▪ Advance early warning system through Agromet advisories. ▪ Awareness on fodder cultivation & identification of locally available, natural fodder of the area. ▪ Excess fodder may be stored as hay/silage or converted into feed block in the flush season, for lean period. ▪ Stacking of paddy straws. ▪ Installation of feed block machines and creating feed/fodder block banks to be used in emergency. 	<ul style="list-style-type: none"> ▪ Avoid feeding of damp feeds and fodders ▪ Storage of feeds and fodder in high raised platform. ▪ Use of unconventional feed/fodders resources (water hyacinth) ▪ Shifting of livestock to high raised areas. ▪ Use of feed additives to improve digestibility. ▪ Provision of UMB etc. ▪ Use of stored Hay and Silage 	<ul style="list-style-type: none"> ▪ Submitting a reports, damage caused by flood to feed and standing fodder ▪ Supplementary feeding of livestock to regain the general physiological imbalanced. ▪ Proper irrigation of folder plot and cultivation of leguminous fodders to meet the demand of green fodders. ▪ Avail the benefits of schemes under flood, from state or central for feeds and fodder.
Drinking water	<ul style="list-style-type: none"> ▪ Storage of safe drinking water in community tanks / water harvesting structures which is not prone to seepage of flood water. ▪ Installation of large sized sand filters with charcoal. ▪ Tying up with PHED Deptt. of neighboring district to supply water at needy time. ▪ Creating awareness amongst public 	<ul style="list-style-type: none"> ▪ Chlorination of the drinking water and use of sand filter ▪ Incorporation of aquatic plants in feeds as a supplementary source of water ▪ If possible supply of fresh drinking water from nearby district. 	<ul style="list-style-type: none"> ▪ Cleaning of water storage tanks, canals and drainage system. ▪ Cleaning and disinfection of water source with suitable water purifying agent, available in the area as per the recommended dose. ▪ Relief for damaged tanks and community pipe line for reconstruction. ▪ Avoid shallow source of water

	how to conserve water and judiciously use in flood situation.		
Health and disease management	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load ▪ Vaccination of FMD, BQ and HS. ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. ▪ Construction of shelters in high raised areas. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Immediate attention to the ailing animals. ▪ Sanitization of the shed and surrounding areas. ▪ selective culling of animal ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to flood and remedies to be taken accordingly for future.
Cyclone	NA	NA	NA
Feed and fodder availability	<ul style="list-style-type: none"> ▪ Advance early warning system through Agromet advisories. ▪ Proper storage of feeds and fodder in well constructed house ▪ Planting of trees as a wind break in farm area ▪ Excess fodder may be stored as hay/silage or converted into feed block in the flush season, for lean period. ▪ Stacking of paddy straws. 	<ul style="list-style-type: none"> ▪ Avoid feeding grazing in open field ▪ Animal should be confined in well construct house. ▪ Use of feed additives to improve digestibility. ▪ Provision of UMB etc. ▪ Use of stored Hay and Silage 	<ul style="list-style-type: none"> ▪ Submitting a reports, damage caused by cyclone of standing fodder ▪ Avail the benefits of schemes under flood, from state or central for feeds and fodder.
Drinking water	<ul style="list-style-type: none"> ▪ Advance early warning system through Agromet advisories for preparedness to combat the situation. ▪ Storage of safe drinking water in community tanks / water harvesting structures ▪ Creating awareness amongst public how to conserve water and judiciously use in flood situation. ▪ Tying up with PHED Deptt. of 	<ul style="list-style-type: none"> ▪ Chlorination of the drinking water and use of sand filter ▪ Provide fresh potable water 	<ul style="list-style-type: none"> ▪ Cleaning of water storage tanks, canals and drainage system. ▪ Cleaning and disinfection of water source with suitable water purifying agent, available in the area as per the recommended dose. ▪ Relief for damaged tanks and community pipe line for reconstruction. ▪ Avoid shallow source of water

	neighboring district to supply water at needy time.		
Health and disease management	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. ▪ selective culling of injured animal 	<ul style="list-style-type: none"> ▪ Immediate attention to the ailing animals. ▪ selective culling of injured animal ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Sanitization of the shed and surrounding areas. ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to flood and remedies to be taken accordingly for future.
Heat wave			
Cattle			
Shelter/environment management	<ul style="list-style-type: none"> ▪ Advance early warning system through Agromet advisories for preparedness to combat the situation. ▪ Good shelter with well ventilation and bedding materials ▪ Construction of shelters in wind shed areas. ▪ Increase the concentrate feed amount and reduce the roughage diet. ▪ Adlib provision of potable water 	<ul style="list-style-type: none"> ▪ Confine the animal in protected shelter ▪ prevent them direct expose to heat wave ▪ reduce upto 20% of the ration ▪ provide nutretical ▪ Adlib provision of potable water ▪ Avoid movement of animal ▪ Sprinkling of water during the extreme heat to the animal ▪ Breeding should be done in morning hours. 	<ul style="list-style-type: none"> ▪ Adlib provision of potable water ▪ Analysis of the present experience and remodeling of housing structure. ▪ provide nutretical
Health and disease management	<ul style="list-style-type: none"> ▪ Advance early warning system through Agromet advisories for preparedness to combat the situation. ▪ Ensure livestock insurance ▪ Deworming and vaccination ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat 	<ul style="list-style-type: none"> ▪ Life saving treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. ▪ Oral supplementation of electrolyte and medicines 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Immediate attention to the ailing animals. ▪ Sanitization of the shed and surrounding areas. ▪ Selective culling of animal ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to cold wave and remedies to be taken accordingly for

	<p>the situation if arise.</p> <ul style="list-style-type: none"> ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. 		future.
Mithun			
Shelter/environment management	<ul style="list-style-type: none"> ▪ Advance early warning system through Agromet advisories for preparedness to combat the situation. ▪ Good shelter with well ventilation and bedding materials ▪ Construction of shelters in wind shed areas. ▪ Increase the concentrate feed amount and reduce the roughage diet. ▪ Adlib provision of potable water 	<ul style="list-style-type: none"> ▪ Confine the animal in protected shelter ▪ prevent them direct expose to heat wave ▪ reduce upto 20% of the ration ▪ provide nutretical ▪ Adlib provision of potable water ▪ Avoid movement of animal ▪ Sprinkling of water during the extreme heat to the animal ▪ Breeding should be done in morning hours. 	<ul style="list-style-type: none"> ▪ Adlib provision of potable water ▪ Analysis of the present experience and remodeling of housing structure. ▪ provide nutretical
Health and disease management	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. ▪ selective culling of injured animal 	<ul style="list-style-type: none"> ▪ Immediate attention to the ailing animals. ▪ selective culling of injured animal ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Sanitization of the shed and surrounding areas. ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to flood and remedies to be taken accordingly for future.
Goat/Sheep			
Shelter/environment management	<ul style="list-style-type: none"> ▪ Advance early warning system through Agromet advisories for preparedness to combat the situation. ▪ Good shelter with well ventilation and bedding materials 	<ul style="list-style-type: none"> ▪ Confine the animal in protected shelter ▪ prevent them direct expose to heat wave ▪ reduce upto 20% of the ration ▪ provide nutretical ▪ Adlib provision of potable water 	<ul style="list-style-type: none"> ▪ Adlib provision of potable water ▪ Analysis of the present experience and remodeling of housing structure. ▪ provide nutretical

	<ul style="list-style-type: none"> ▪ Construction of shelters in wind shed areas. ▪ Increase the concentrate feed amount and reduce the roughage diet. ▪ Adlib provision of potable water 	<ul style="list-style-type: none"> ▪ Avoid movement of animal ▪ Sprinkling of water during the extreme heat to the animal ▪ Breeding should be done in morning hours. 	
Health and disease management	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. ▪ selective culling of injured animal 	<ul style="list-style-type: none"> ▪ Immediate attention to the ailing animals. ▪ selective culling of injured animal ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Sanitization of the shed and surrounding areas. ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to flood and remedies to be taken accordingly for future.
Pig			
Shelter/environment management	<ul style="list-style-type: none"> ▪ Advance early warning system through Agromet advisories for preparedness to combat the situation. ▪ Good shelter with well ventilation and bedding materials ▪ Construction of shelters in wind shed areas. ▪ Increase the concentrate feed amount and reduce the roughage diet. ▪ Adlib provision of potable water 	<ul style="list-style-type: none"> ▪ Confine the animal in protected shelter ▪ prevent them direct expose to heat wave ▪ reduce upto 20% of the ration ▪ provide nutretical ▪ Adlib provision of potable water ▪ Avoid movement of animal ▪ Sprinkling of water during the extreme heat to the animal ▪ Breeding should be done in morning hours. 	<ul style="list-style-type: none"> ▪ Adlib provision of potable water ▪ Analysis of the present experience and remodeling of housing structure. ▪ provide nutretical
Health and disease management	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. ▪ selective culling of injured animal 	<ul style="list-style-type: none"> ▪ Immediate attention to the ailing animals. ▪ selective culling of injured animal ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Sanitization of the shed and surrounding areas. ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to flood and remedies to be taken accordingly for future.

	<ul style="list-style-type: none"> ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. 		
Cold wave			
Cattle			
Shelter/environment management	<ul style="list-style-type: none"> ▪ Good shelter with well ventilation and bedding materials ▪ Construction of shelters in wind shed areas. ▪ Feed balance ration to withstand the cold wave prior to occurrence. 	<ul style="list-style-type: none"> ▪ Confine the animal in protected shelter ▪ prevent them direct expose to cold wave ▪ provide extra bedding materials ▪ feed extra ration along with mineral and vitamin supplements to withstand cold wave ▪ 	<ul style="list-style-type: none"> ▪ Analysis of the present experience and remodeling of housing structure.
Health and disease management	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Immediate attention to the ailing animals. ▪ Sanitization of the shed and surrounding areas. ▪ selective culling of animal ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to cold wave and remedies to be taken accordingly for future.
Mithun			
Shelter/environment management	<ul style="list-style-type: none"> ▪ Good shelter with well ventilation and bedding materials ▪ Construction of shelters in wind shed areas. ▪ Feed balance ration to withstand the cold wave prior to occurrence. 	<ul style="list-style-type: none"> ▪ Confine the animal in protected shelter ▪ prevent them direct expose to cold wave ▪ provide extra bedding materials ▪ feed extra ration along with mineral and vitamin supplements to withstand cold wave ▪ 	<ul style="list-style-type: none"> ▪ Analysis of the present experience and remodeling of housing structure.
Health and disease management	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load ▪ Stocking of veterinary medicines, vitamin and mineral supplements. 	<ul style="list-style-type: none"> ▪ 1. Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ 2. Supplementary feeding of vitamin and 	<ul style="list-style-type: none"> ▪ 1. Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ 2. Immediate attention to the ailing animals.

	<ul style="list-style-type: none"> ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. 	mineral to improve general body health.	<ul style="list-style-type: none"> ▪ 3. Sanitization of the shed and surrounding areas. ▪ 4. selective culling of animal ▪ 5. Submitting a memorandum to state or central Govt. regarding the loss of animal due to cold wave and remedies to be taken accordingly for future.
Pig			
Shelter/environment management	<ul style="list-style-type: none"> ▪ Good shelter with well ventilation and bedding materials ▪ Construction of shelters in wind shed areas. ▪ Feed balance ration to withstand the cold wave prior to occurrence. 	<ul style="list-style-type: none"> ▪ Confine the animal in protected shelter ▪ prevent them direct expose to cold wave ▪ provide extra bedding materials ▪ feed extra ration along with mineral and vitamin supplements to withstand cold wave 	<ul style="list-style-type: none"> ▪ Analysis of the present experience and remodeling of housing structure.
Health and disease management	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Immediate attention to the ailing animals. ▪ Sanitization of the shed and surrounding areas. ▪ Selective culling of animal ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to cold wave and remedies to be taken accordingly for future.
Goat/Sheep			
Shelter/environment management	<ul style="list-style-type: none"> ▪ Good shelter with well ventilation and bedding materials ▪ Construction of shelters in wind shed areas. ▪ Feed balance ration to withstand the cold wave prior to occurrence. 	<ul style="list-style-type: none"> ▪ Confine the animal in protected shelter ▪ prevent them direct expose to cold wave ▪ provide extra bedding materials ▪ feed extra ration along with mineral and vitamin supplements to withstand cold wave 	<ul style="list-style-type: none"> ▪ Analysis of the present experience and remodeling of housing structure.
Health and disease management	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment

	<ul style="list-style-type: none"> ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. 	<p>accordingly.</p> <ul style="list-style-type: none"> ▪ Supplementary feeding of vitamin and mineral to improve general body health. 	<p>accordingly.</p> <ul style="list-style-type: none"> ▪ Immediate attention to the ailing animals. ▪ Sanitization of the shed and surrounding areas. ▪ Selective culling of animal ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to cold wave and remedies to be taken accordingly for future.
Snowfall	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Immediate attention to the ailing animals. ▪ Sanitization of the shed and surrounding areas. ▪ selective culling of animal ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to cold wave and remedies to be taken accordingly for future.
Earthquake	NA	NA	NA
Landslides	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. ▪ immediate rescue operation ▪ Shifting of livestock to safe areas. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Immediate attention to the ailing animals. ▪ Sanitization of the shed and surrounding areas. ▪ selective culling of animal ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to landslides and remedies to be taken accordingly for future.

^s based on forewarning wherever available

2.5.2 Poultry

	Suggested contingency measures			Convergence/linkages with ongoing programs, if any
	Before the event	During the event	After the event	
Drought				
Shortage of feed ingredients	<ul style="list-style-type: none"> ▪ Awareness on maize, pea and oil seed cultivation for use of poultry feed ▪ Procurement of feed ingredients in bulk. ▪ Installation of feed mixing plant 	<ul style="list-style-type: none"> ▪ Use of stored feed ▪ Use of feeds from the local resources ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. 	<ul style="list-style-type: none"> ▪ Availing insurance for the crop loss. ▪ Availing subsidiary schemes from line deptt. 	Schemes from Line Deptt./RKVY/ATMA
Drinking water	<ul style="list-style-type: none"> ▪ Construction of water harvesting structures. ▪ Harvesting rain water & water from natural source ▪ Developing watershed areas. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. 	<ul style="list-style-type: none"> ▪ Provision of potable water ▪ Use of stored water from water harvesting structure. ▪ Fetching water from watershed areas and natural stream/river. ▪ Avail subsidy water supply through tankers from state or central Govt. 	<ul style="list-style-type: none"> ▪ Submitting a memorandum to state or central Govt. regarding amount of water shortfall during drought and action to be initiated accordingly. ▪ Construction of permanent water harvesting structure with a planning to fulfill the water requirement during drought. 	
Health and disease management	<ul style="list-style-type: none"> ▪ Regular deworming and vaccination against viral disease. ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. ▪ Proper ventilation system of Housing to reduce heat stress. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to reduce heat stress ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ selective culling of bird ▪ Submitting a memorandum to state or central Govt. regarding the loss of poultry due to Drought and remedies to be taken accordingly for future. 	
Floods				
Shortage of feed	<ul style="list-style-type: none"> ▪ Awareness on maize, pea and 	<ul style="list-style-type: none"> ▪ Use of stored feed 	<ul style="list-style-type: none"> ▪ Availing insurance for the crop 	

ingredients	<ul style="list-style-type: none"> oil seed cultivation for use of poultry feed ▪ Procurement of feed ingredients in bulk and store in raise floor. ▪ Installation of feed mixing plant 	<ul style="list-style-type: none"> ▪ Use of feeds from the local resources ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. 	<ul style="list-style-type: none"> loss. ▪ Availing subsidiary schemes from line deptt. 	
Drinking water	<ul style="list-style-type: none"> ▪ Storage of safe drinking water in community tanks / water harvesting structures which is not prone to seepage of flood water. ▪ Installation of large sized sand filters with charcoal. ▪ Tying up with PHED Deptt. of neighboring district to supply water at needy time. ▪ Creating awareness amongst public how to conserve water and judiciously use in flood situation. 	<ul style="list-style-type: none"> ▪ Chlorination of the drinking water and use of sand filter ▪ Supply of fresh drinking water from nearby district. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. 	<ul style="list-style-type: none"> ▪ Cleaning of water storage tanks ▪ Relief for damaged tanks and community pipe line for reconstruction. 	
Health and disease management	<ul style="list-style-type: none"> ▪ Regular deworming and vaccination against viral disease. ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. ▪ Proper ventilation system of Housing to reduce heat stress. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to reduce heat stress ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ selective culling of bird ▪ Submitting a memorandum to sate or central Govt. regarding the loss of poultry due to Drought and remedies to be taken accordingly for future. 	
Cyclone				
Shortage of feed ingredients	NA	NA	NA	NA

Drinking water	NA	NA	NA	NA
Health and disease management	NA	NA	NA	NA
Heat wave				
Shelter/environment management	<ul style="list-style-type: none"> ▪ Advance early warning system through Agromet advisories for preparedness to combat the situation. ▪ Good shelter with well ventilation and bedding materials ▪ Construction of shelters in wind shed areas. ▪ Increase the concentrate feed amount and reduce the roughage diet. ▪ Adlib provision of potable water 	<ul style="list-style-type: none"> ▪ Confine the animal in protected shelter ▪ prevent them direct expose to heat wave ▪ reduce upto 20% of the ration ▪ provide nutretical ▪ Adlib provision of potable water ▪ Avoid movement of animal ▪ Misting of water during the extreme heat to the animal 	<ul style="list-style-type: none"> ▪ Adlib provision of potable water ▪ Analysis of the present experience and remodeling of housing structure. ▪ provide nutretical 	
Health and disease management	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. ▪ selective culling of injured animal 	<ul style="list-style-type: none"> ▪ Immediate attention to the ailing animals. ▪ selective culling of injured animal ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Sanitization of the shed and surrounding areas. ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to flood and remedies to be taken accordingly for future. 	
Cold wave				
Shelter/environment management	<ul style="list-style-type: none"> ▪ Good shelter with well ventilation and bedding materials 	<ul style="list-style-type: none"> ▪ Confine the bird in protected shelter ▪ prove extra light to keep them 	<ul style="list-style-type: none"> ▪ Analysis of the present experience and remodeling of housing 	

	<ul style="list-style-type: none"> ▪ Construction of shelters in wind shed areas. ▪ Feed balance ration to withstand the cold wave prior to occurrence. 	<ul style="list-style-type: none"> warm ▪ prevent them direct expose to cold wave ▪ provide extra bedding materials ▪ feed extra ration along with mineral and vitamin supplements to withstand cold wave ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. 	<ul style="list-style-type: none"> structure. 	
Health and disease management	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load and vaccination to protect viral disease ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Immediate attention to the ailing animals. ▪ Sanitization of the shed and surrounding areas. ▪ selective culling of animal ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to cold wave and remedies to be taken accordingly for future. 	
Snowfall	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load and vaccination to protect against viral disease ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Providing available communication and 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Immediate attention to the ailing animals. ▪ Sanitization of the shed and surrounding areas. ▪ selective culling of animal ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to snow fall and remedies to be taken accordingly for future. 	NA

	transportation facilities in every dispensary / clinic for consultations.			
Earthquake, Landslides etc	<ul style="list-style-type: none"> ▪ Ensure livestock insurance ▪ Deworming to reduce worm load and vaccination to protect against viral disease ▪ Stocking of veterinary medicines, vitamin and mineral supplements. ▪ Training of paravets and identifying key man in each village to combat the situation if arise. ▪ Providing available communication and transportation facilities in every dispensary / clinic for consultations. 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Supplementary feeding of vitamin and mineral to improve general body health. ▪ immediate rescue operation ▪ Shifting of livestock to safe areas. ▪ Regular radio/TV telecast to follow the instruction of Do & Don'ts from experts 	<ul style="list-style-type: none"> ▪ Mass awareness cum Health camp and symptomatically prompt treatment accordingly. ▪ Immediate attention to the ailing animals. ▪ Sanitization of the shed and surrounding areas. ▪ selective culling of animal ▪ Submitting a memorandum to state or central Govt. regarding the loss of animal due to landslides and remedies to be taken accordingly for future. 	NA

^a based on forewarning wherever available